said sensing circuit including a first output supplying said output indicating signal and a second output for a drive circuit to output a drive signal for driving said emitting element.--

REMARKS

Claims 1-20 are now pending in this application. Claims 5-20 are added herein.

Claims 1-3 are rejected under 35 U.S.C. § 102(e) as being anticipated by Sawatari. Applicant herein respectfully further traverses these rejections.

With regard to claim 1-4, Sawatari (USP 6330519) fails to disclose or suggest the features of the invention, i.e. Sawatari fails to disclose or suggest the feature that a control circuit turns off a power-supply for the sensor at a time when output from the sensor is accepted. Sawatari merely discloses a visibility sensor system that determines sample rate according to measured atmospheric conditions. Col. 7, lines 39-41. As shown in Fig. 4, the microcontroller 26 looks to various sensors to take a number of readings. First a pressure reading is taken in step 80. Thus, data of some sort indicating pressure must be accepted by the microcontroller 26 at this point in time. Then the microcontroller 26 proceeds to accept data from a humidity sensor and a temperature sensor in steps 82 and 84. No mention of

cutting power to the individual sensors after reading each is made as would be necessary to disclose the claimed subject matter. At this point in time processing is effected by the microcontroller 26 to determine the distance from saturation surface and no mention is made of removing power from any of the aforementioned sensors prior to the processing. Only once the microcontroller processes all the accepted data is a determination of sampling rate made. Even after a sampling rate is determined, there is no mention of controlling power to the individual sensors. Hence, there cannot be a teaching of controlling power based on acceptance of data from the individual sensors. As best understood from the Sawatari disclosure, the sampling rate applies to the operation of the entire system and does not involve power control based upon acceptance of data.

Claim 1 specifically recites the following:

> a control circuit for receiving and processing said sensor output and for turning off said power-supply switch when said control circuit accepts the sensor output from said sensor.

Acceptance of data from the sensor is the trigger for powering off the sensor. If Sawatari were to provide such a teaching, it would have to address cutting power after each of steps 80, 82, and 84. Such a disclosure is not present in Sawatari.

Referring now to new claim 5, the power saving attributes of the present invention are related as follows:

> said control circuit including means for detecting completion of reception of said sensor module output and for turning off said sensor module power-supply switch in response to the detection of completion and prior to said control circuit processing said sensor module output.

This subject matter provides for power saving by shutting off power to the sensor module once data is accepted from the sensor and prior to further processing of the data. Leaving power applied to the sensor module during processing of the data receive therefrom is unnecessary because no further readings from the sensor module are required. As related in the background section of the present specification, prior art systems merely shut down power after a predetermined time period of operation and not based on data. However, since sensor modules operate at different rates, the predetermined time period had to be made long enough to account for varying rate thus leading to energy waste. In contrast, the presently claimed invention uses the acceptance of data as a basis for shutting down power. Such operation is in no way disclosed by the Sawatari reference.

Claims 6 and 14 both relate subject matter relating to the control of power to a data line to which the sensor module output is applied. Rather than applying power to the data line before the sensor module output is ready, power is selectively applied in response to an output indicating signal which triggers a data line control means to set a switch to enable data reading. There is no teaching in the Sawatari reference that would lead one to this feature.

Furthermore, with regard to claims 7 and 16, subject matter relating to disabling the data line in response to completion of the acceptance of data is related. As noted above, Sawatari does not teach control based upon acceptance of data, hence it cannot teach controlling a data line as claimed.

For the convenience of the Examiner, all pending claims are presented in Appendix I.

In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited. Please charge any deficiency or credit any overpayment to Deposit Account No. 10-1250.

Respectfully submitted,
Jordan and Hamburg LLP

By Frank J. Jordan
Frank J. Jordan
Reg. No. 20,456
Attorney for Applicants

and,

By Herbert F Ruschmann
Herbert F. Ruschmann
Reg. No. 35,341
Attorney for Applicants

Jordan and Hamburg LLP
122 East 42nd Street
New York, New York 10168
(212) 986-2340

APPENDIX I

ALL PENDING CLAIMS

1. (Amended) A sensor system comprising:

a sensor having a sensor power input and an output for supplying a sensor output;

a controller including:

a power-supply switch for switching on or off a supply of electrical power to said sensor power input; and

a control circuit for receiving and processing said sensor output and for turning off said power-supply switch when said control circuit accepts the sensor output from said sensor.

2. (Amended) The sensor system of claim 1, wherein said sensor is a distance measurement sensor including a light projection means, a driver circuit for supplying an emission signal to said light projection means, and a light-receiving means for receiving light arising from light projected from said light projection means, and wherein said controller starts acceptance of the sensor output from said sensor according to said emission signal.

3. (Amended) The sensor system of claim 2, wherein:

said sensor includes an open collector type output terminal as said output for producing said sensor output,

said controller further includes a series combination of a resistor and a switching means,

said series combination is connected between said output terminal and a power supply, and a voltage developed at a terminal between said series combination and said output terminal is accepted as the sensor output from said sensor, and

said control circuit turns on or off said switching means based on operation of said emission signal.

4. (Amended) The sensor system of any one of claims 1 to 3, wherein said controller enters a standby state of low power consumption in response to an end of said processing of said sensor output.

5. A sensor system comprising:

a sensor module having a sensor module power input and an output for supplying a sensor module output;

a sensor module power-supply switch for switching on or off a supply of electrical power to said sensor module power input;

a control circuit for receiving and processing said sensor module output and providing a processed output; and

said control circuit including means for detecting completion of reception of said sensor module output and for turning off said sensor module power-supply switch in response to the detection of completion and prior to said control circuit processing said sensor module output.

6. The sensor system of claim 5 wherein:

said sensor module includes:

a sensor element; and

a sensing circuit for processing an output signal from said sensor element to provide said sensor module output and for outputting an output indicating signal signifying a start of output of said sensor module output;

said control circuit including:

a data line switch controlling power to a data line receiving said sensor module output to enable reading of said sensor module output; and

a data line control means for setting said data line switch to enable reading of said sensor module output in response to receiving said output indicating signal.

7. The sensor system of claim 6 wherein said data line control means sets said data line switch to disable reading said sensor module output in response to the detection of completion and prior to said control circuit processing said sensor module output.

8. The sensor system of claim 7 wherein said sensor module includes:

an emitting element for sending out an emission to be sensed by said sensor element; and

said sensing circuit including a drive circuit producing a drive signal for driving said emitting element and driving generation of said output indicating signal.

9. The sensor system of claim 8 wherein said drive signal and said output indicating signal are formed of a number of pulses and said data line control means

recognizes completion of said number of pulses to set said data line switch to enable reading of said sensor module output.

10. The sensor system of claim 8 wherein said emitting element is a light generating device and said sensor element is a light detecting device.

11. The sensor system of claim 7 wherein said sensor module includes:

an emitting element for sending out an emission to be sensed by said sensor element; and

said sensing circuit including a first output supplying said output indicating signal and a second output for a drive circuit to output a drive signal for driving said emitting element.

12. The sensor system of claim 11 wherein said emitting element is a light generating device and said sensor element is a light detecting device.

13. The sensor system of claim 7 wherein said sensor module includes:

an emitting element for sending out an emission of light to be sensed by said sensor element;

said sensing circuit including a drive circuit to output a drive signal for driving said emitting element; and

said sensor element is a light detection device.

14. A sensor system comprising:

a sensor module including:

a sensor element; and

a sensing circuit for processing an output signal from said sensor element to provide a sensor module output and for outputting an output indicating signal signifying a start of output of said sensor module output; and

a control circuit for receiving and processing said sensor module output and providing a processed output, said control circuit including:

a data line switch controlling power to a data line receiving said sensor module output to enable reading of said sensor module output; and

a data line control means for setting said data line switch to enable reading of said sensor module output in response to receiving said output indicating signal.

15. The sensor system of claim 14 wherein said sensor module includes:

an emitting element for sending out an emission to be sensed by said sensor element;

said sensing circuit including a drive circuit producing a drive signal for driving said emitting element and driving generation of said output indicating signal.

16. The sensor system of claim 14 wherein:

said control circuit include means for detecting completion of reception of said sensor module output; and

said data line control means sets said data line switch to disable reading said sensor module output in response to the detection of completion and prior to said control circuit processing said sensor module output.

17. The sensor system of claim 16 wherein said sensor module includes:

an emitting element for sending out an emission to be sensed by said sensor element; and

said sensing circuit including a drive circuit producing a drive signal for driving said emitting element and driving generation of said output indicating signal.

18. The sensor system of claim 17 wherein said drive signal and said output indicating signal are formed of a number of pulses and said data line control means recognizes completion of said number of pulses to set said data line switch to enable reading of said sensor module output.

19. The sensor system of claim 17 wherein said emitting element is a light generating device and said sensor element is a light detecting device.

20. The sensor system of claim 16 wherein said sensor module includes:

an emitting element for sending out an emission to be sensed by said sensor element; and

said sensing circuit including a first output supplying said output indicating signal and a second output for a drive circuit to output a drive signal for driving said emitting element.